

Claims

1. Method for ventilation of hydrogen gas comprising joining a first metallic layer (1), sensitive to hydrogen embrittlement, to a second (2) metallic layer, and a mesh (4), wherein the first layer (1) is joined to the second layer (2), and said mesh (4), forming
5 venting channels (5) through which channels (5) hydrogen can be vented, is joined to, and in between, said first (1) and second (2) metallic layers.

2. Method for producing a construction comprising at least two metallic layers by joining a first metallic layer (1) sensitive to hydrogen embrittlement to a second (2) metallic layer, and a mesh (4), wherein the first metallic layer (1) is joined to the second
10 metallic layer (2), and said mesh (4) is joined to, and in between, the first (1) and the second (2) metallic layers.

3. A method as claimed in any of the preceding claims wherein a third (3) metallic layer is joined to, and in between, the first (1) and the second (2) metallic layers, and wherein said mesh (4) is joined to, and in between, said second (2) and third (3)
15 metallic layers.

4. Method according to any of the preceding claims wherein the first metallic layer (1) is selected from Fe, steel, Ti, Zr, Nb, Ta or alloys thereof.

5. Method according to any of the preceding claims wherein the mesh (4) is selected from Fe, Ag, Ni, hastelloy or alloys thereof as well as plastic materials, ceramics
20 or the like.

6. Method according to any of the preceding claims wherein the mesh (4) apertures are from about 0.5 to about 10 mm.

7. Method according to any of the preceding claims wherein the thickness of the mesh (4) is from about 0.1 to about 5 mm.

8. Method according to any of the preceding claims wherein the mesh (4) is joined by means of explosion bonding, rolling, bolting or the like.
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9. Method according to any of claims 3-8 wherein a fourth metallic layer (4) is joined to, and in between, the first (1) and the third (3) metallic layers.

10. Construction (8) obtainable by the method according to any of the preceding
30 claims.

11. Construction (8) comprising at least two metallic layers wherein a first metallic layer (1), sensitive to hydrogen embrittlement, is joined to a second metallic layer (2), and wherein a mesh (4), providing venting channels (5) between said first (1) and second (2) metallic layers, is joined to, and in between, said first (1) and second (2)
35 metallic layers.

12. Construction (8) according to claim 11, wherein a third metallic layer (3) is joined to, and in between, said first (1) and second (2) metallic layer, and wherein the mesh (4), is joined to, and in between, the second (2) and the third (3) metallic layers.

13. Construction (8) according to any of claims 11-12 wherein a fourth metallic
5 layers (4) is joined to, and in between, the third (3) and the first (1) metallic layers.

14. Construction (8) according to any of claims 11-13 wherein the channels (5) formed have a diameter from about 0.01 μm to about 1000 μm .

15. Construction (8) according to any of claims 11-14 wherein the first metallic layer (1) is selected from Ti, Zr, Nb, Ta or alloys thereof.

10 16. Construction (8) according to any of claims 11-15 wherein the first (1), the third (3), and the second (2) layers form an anode, an intermediate layer, and a cathode providing a bipolar electrode or the like.

17. Construction (8) according to any of claims 11-16 wherein the hydrogen permeability is lower in the third layer (3) than in the second layer (2).

15 18. Electrochemical cell characterised in that it comprises an electrode as defined in any of claims 16-17.

19. Use of an electrochemical cell according to claim 18 for production of alkali metal chlorate, alkali metal hydroxide, hypochlorite or the like.